PATENT ABSTRACTS OF JAPAN

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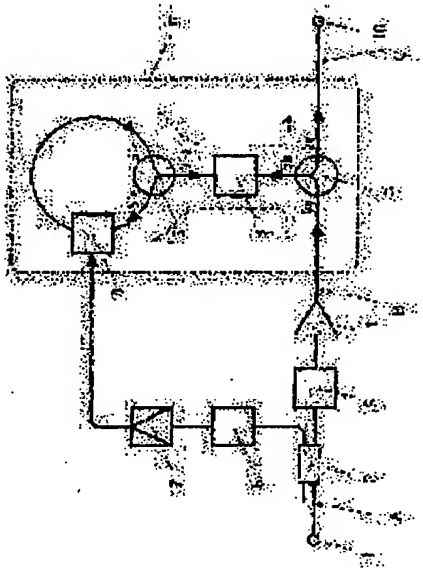
(54) OPTICAL PULSE COMPRESSOR, OPTICAL FUNCTION GENERATOR, OPTICAL PULSE COMPRESSING METHOD, AND OPTICAL FUNCTION GENERATING METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a small-sized and highly functional optical pulse compressor used for ultra high speed optical communication and optical measurement and capable of generating an ultrashort pulse train of low power and high repetitive frequency, and to provide an optical function generator having a simple construction and realizing an optional time base waveform.

SOLUTION: The optical pulse compressor has an optical phase modulator 9 driven by the repetitive frequency of an input optical pulse train and a dispersive medium 8, is provided with an optical Fourier transformer F for transforming the form of a frequency spectrum of an inputted optical pulse into a time base waveform and an optical filter 3 for narrowing the spectrum width of the inputted optical pulse, and transforms the optical pulse outputted from the optical filter 3 and having narrow spectrum width into an optical pulse having narrow time width by using the optical Fourier transformer F. The optical function generator generates an optical pulse having an optional time base waveform by reproducing, on the time axis, the spectrum whose waveform is optionally shaped by the optical filter as it is using the optical Fourier transformer F.



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